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Public sector adjustment to external shocks
and domestic pressures in Brazil, 1970-85¹

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ABSTRACT

There is a widespread view that very often the behaviour of the public sector in Brasil, as in other Latin American countries facing similar external economic problems, has been detrimental to the adjustment effort that was required from the economy, amplifying therefore the difficulties to be faced, and contributing to make harder the role to be played by the private sector in the adjustment. The purpose of the paper is to examine the behaviour of the public sector along the various external adjustment processes of the Brazilian economy since the early seventies, and to analyse to what extent the mentioned widespread view is really true in the case of Brazil.

SUMÁRIO

É bastante generalizada a visão de que frequentemente o comportamento do setor público no Brasil, bem como em outros países latino-americanos que têm estado às voltas com problemas econômicos externos similares, tem sido prejudicial ao esforço de ajuste requerido da economia, amplificando as dificuldades a enfrentar e contribuindo para tornar ainda mais penoso o papel a ser cumprido pelo setor privado no ajuste. O objetivo deste artigo é examinar o comportamento do setor público durante os vários processos de ajuste externo da economia brasileira desde o início dos anos setenta, e analisar em que medida as evidências disponíveis comprovam a veracidade da referida visão no caso do Brasil.

0. Introduction

Since the mid-seventies the Brazilian economy has gone through several important external shocks as a result of marked changes that have been taking place in the world economy, involving commodity prices, international interest rates, recession in the industrialized economies and availability of foreign credit to less developed countries. Many aspects of such shocks and the overall adjustment processes imposed on the Brazilian economy have been extensively studied along the last few years and there is already a considerable literature available on the subject².

However, more specific aspects of those processes have been object of much less research effort than they deserve. That, certainly seems to be the case of the role played by the public sector in the adjustment processes. There is a widespread view that very often the behaviour of the public sector in Brasil, as in other Latin American countries facing similar external economic problems, has been detrimental to the adjustment effort that was required from the economy, amplifying therefore the difficulties to be faced, and contributing to make harder the role to be played by the private sector in the adjustment.

The purpose of this paper is to examine the behaviour of the public sector along the various external adjustment processes of the Brazilian economy since the early seventies, and for some recent contributions to analyse to what extent the mentioned widespread view is really true in the case of Brazil. The next section outlines the sequence of external shocks and the resulting overall pattern of adjustment followed by the Brazilian economy, in order to provide a background for the more specific discussion that comes next. Section 2 contains an analysis of the behaviour of the public sector till 1980. Section 3 covers the ensuing recession period and the recovery. The final section analyses the overall adjustment pattern followed by the public sector and some important consequences it imposes on the growth prospects of the Brazilian economy.

1. An overview of the background

The sequence of shocks and the overall pattern of adjustment followed by the Brazilian economy are well known. Firstly, terms of trade were very badly affected by the sharp increase in oil prices in late 1973. The mounting balance of payment difficulties led to the adoption of a growth-cum-debt adjustment strategy. Government refused to abort the rapid growth process that was taking place in Brazil since the late sixties³. Instead, a bold import substitution and export promoting

² For some recent contributions see Carneiro [1986b] and Carneiro [1987].

³ The military government's fierce commitment to a rapid expansion of the economy was viewed as important in helping to legitimize the authoritarian nature of the regime. See, for example, Skidmore (1973).

investment program, involving both public and private sectors, was adopted, as favourable foreign credit availability seemed to remove problems that might stem from the financing side⁴. On the basis of a steeply increasing foreign debt, the GDP growth rate was maintained above 7% from 1974 to 1977. Even so the trade balance deficit was eliminated in 1977, as may be seen in figures 1A and 1B. The improvement in the trade balance resulted in part from bettering terms of trade and fast expanding exports, but also from the possibility of keeping imports practically frozen at the 1974 level, since there was much slack to be taken up. As it was alleged, conditions remaining the same, the economy would start to generate a sizeable trade surplus, and a new equilibrium in the foreign accounts – though involving higher Indebtness – would be quickly attained⁵.

Unfortunately, conditions did not remain the same. Actually they changed dramatically. In 1978 terms of trade started to rapidly worsen again⁶. That trend was enhanced by the new oil shock in 1979, to which the economy was especially vulnerable, since hardly any adjustment in its energy demand pattern had taken place since the previous oil shock, as there had been to major changes in the energy pricing policy yet. Nevertheless, the import substituting and export promoting investment programs were maintained and the average GDP growth rate was kept at 7% during the 1978-80 period. Large trade deficits became the norm again. On the other hand, on the wake of the significant rise in international interest rates, interest payments soared, fuelled, additionally, by the fast swelling foreign debt. At the end of the decade the debt Service was already equivalent to approximately 2/3 of the exports value. The stage was set for the deep foreign exchange crisis that followed.

In late 1980, as the balance of payments situation was becoming untenable and the annual inflation rate reached 100%, the expansionist macroeconomic policy was finally abandoned. Demand control measures were imposed whereas export promoting policies as well as external borrowing incentives were enhanced. In 1981, for the first time since the late forties when official national accounts estimates started to be published, the GDP growth rate became negative (-3.4%). An even deeper recession was avoided at first, since the possibility of just concluding some of the large import-substituting and export promoting investment projects – that had been under way since the mid-seventies – precluded a sharper fall in aggregate investment. In 1982 there was again a positive, though small, GDP growth rate. However, the seriousness of the balance of payments situation after the interruption of voluntary loans from the international private banking system, following the Mexican moratorium in the second half of that year, led to the adoption of more stringent contractionist measures, already under the surveillance of the IMF. Aggregate investment was severely reduced and in 1983 there was again a 2.5% fall in GDP. From 1980 to 1983 per capita

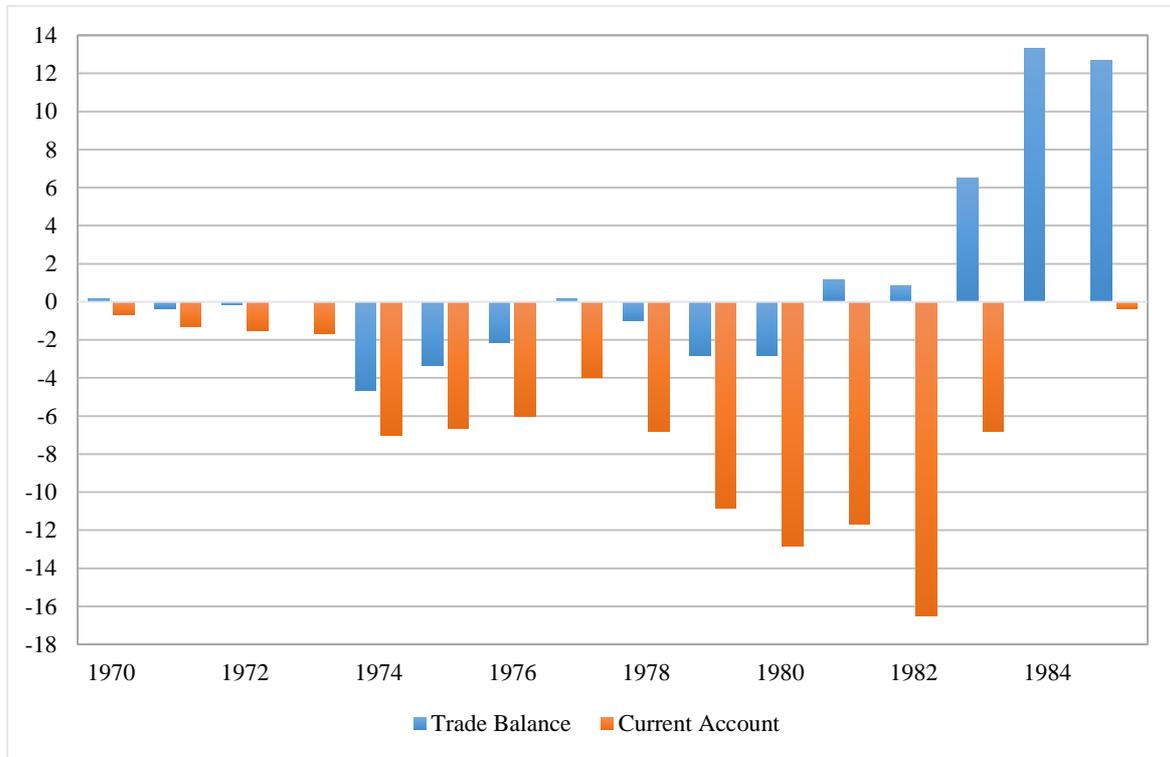
⁴ A detailed analysis of the growth-cum-debt strategy and the planned investment program may be found in Batista [1986].

⁵ The adjustment through Indebtness strategy had meant an increase in net foreign debt from US\$ 6.6 billion in 1973 to 31.8 billion in 1977 and the net debt-exports ratio had risen from .99 to 2.04 over the same period.

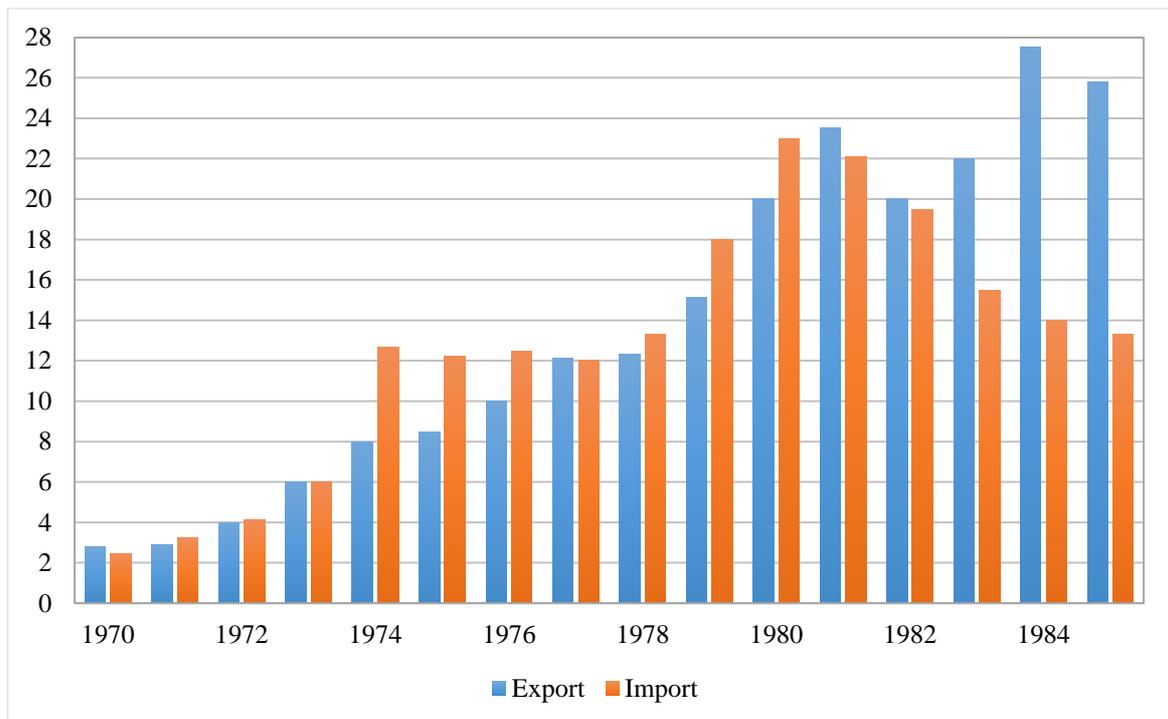
⁶ Mainly as a result of falling coffee and cocoa export prices.

aggregate output was reduced by almost 12%⁷.

Figure 1A
Trade Balance & Current Account Balance (US\$ Billion)

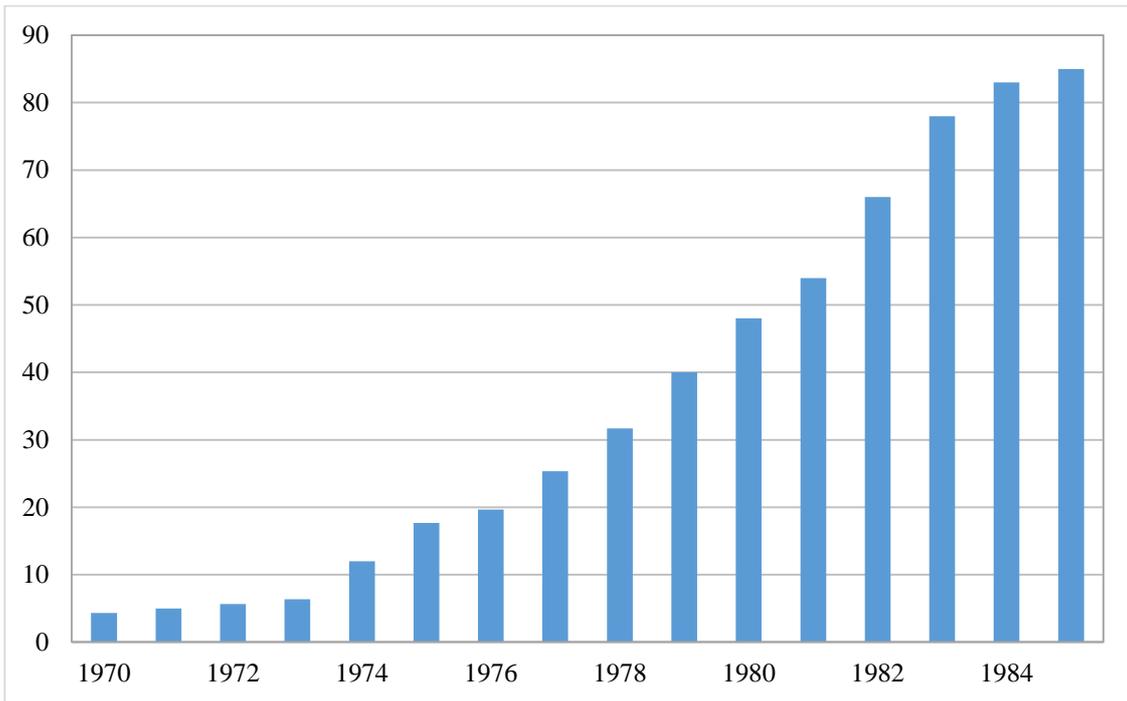


Foreign Trade (US\$ Billion)

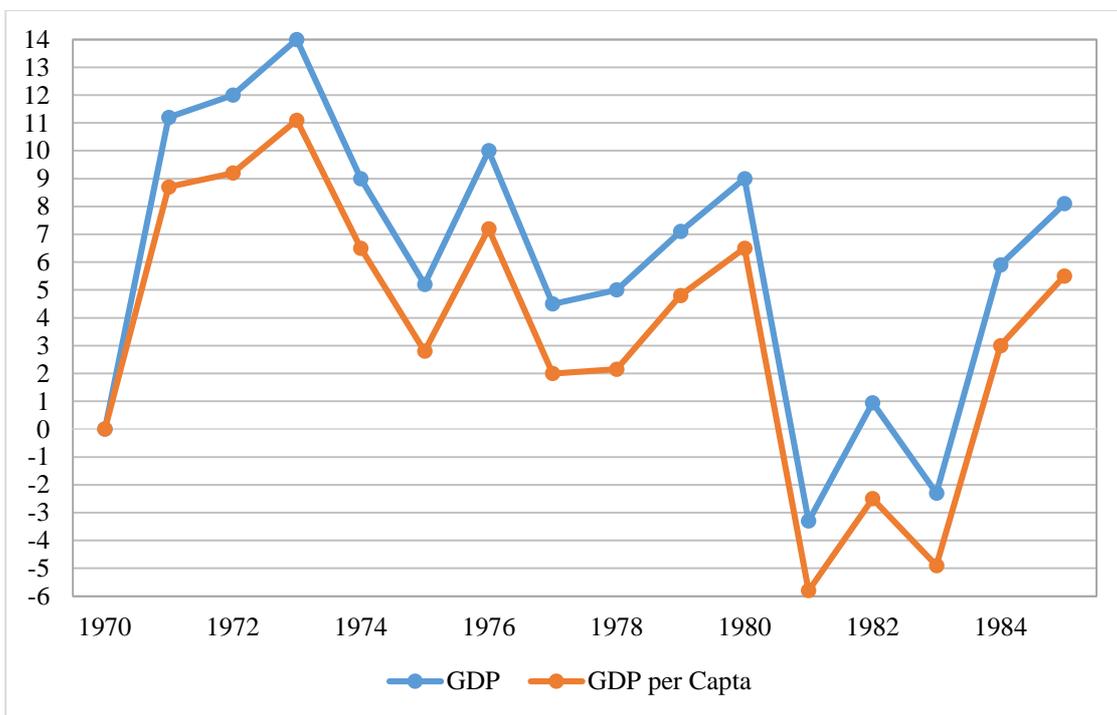


⁷ For further details, see Carneiro [1987].

Figure 1B
Net Foreign Debt (US\$ Billion)



GDP & GDP per Capta Annual Growth Rates



Partly because of the recession and partly because of the structural changes that the maturing of the import-substituting and export promoting investment effort finally made possible, the Brazilian

economy managed to make a surprisingly large external adjustment in only three years⁸. Despite practically stagnated exports, largely due to the recession in industrialized countries and reduction in import capacity of debt ridden Third World trade partners, the trade balance deficit of 2.8 billion observed in 1980 was turned into a 6.3 billion surpluses in 1983. The imports-GDF ratio was reduced from 9.2% in 1980 to 7.3% in 1983. In the following year Brazilian exports could at last increase very fast in the wake of the expansion of world trade fuelled by the growth of the American economy. As there was also a further significant fall in imports in 1984, the result was a 13.1 billion dollars' trade surplus that allowed the economy to service its huge 100 billion dollars' foreign debt and still start to grow again. The imports-GDF ratio was further reduced to only 5.5%, notwithstanding the acceleration of GDP growth to 8.3% in 1985, fostered by lowering international interest rates and falling imported oil prices.

2. Public Sector behaviour during the growth-cum-debt period, 1970-80

It is worth starting with a short comment on the structure of the Brazilian public sector and the nature of relevant available data. As in many other countries, national accounts estimates in Brazil treat public enterprises as belonging to the private sector⁹. The public sector is supposed to include strict governmental activities. That means the most conspicuous government agencies as well as all decentralized public agencies that carry on governmental activities, at local, state and federal level, but not public enterprises. Legal distinctions apart, the main difference between public agencies and those enterprises would be the fact that the latter carry on productive activities which are basically financed from the sales of the resulting goods and Services¹⁰. The unavoidable adoption of a broader concept of public sector in this paper involves, therefore, an effort to complement national accounts estimates and public finance data, both referring to government itself, with information on public enterprises during the period under analysis. Unfortunately, such kind of information is much harder to come by. There is no alternative but to use data collected on a much less systematic base and often involving an incomplete coverage of public enterprises. In what follows the behaviour of the government sector and the behaviour of public enterprises will be analysed separately at first, and afterwards there will be an effort to reach conclusions concerning the public sector as a whole.

⁸ The important role played by those structural changes is stressed and extensively analysed by Batista [1986] and Castro and Souza [1985].

⁹ See Fundação Getúlio Vargas [1972].

¹⁰ See Hanson Costa [1985].

The Government Sector

There is of course a multiplicity of dimensions that might be considered in a full evaluation of the government sector's behaviour in any economy over a period of time. It has become usual to start such an evaluation by examining the evolution of classical government size indicators such as the tax burden and the public expenditures-GDP ratio. In the early seventies aggregate taxes corresponded to slightly more than a quarter of GDP in Brasil. In comparison to other less developed countries' tax burden that ratio may be considered as relatively high, though it is certainly very low in comparison to most industrialized economies. The modernization of the Brazilian tax system, launched in the mid-sixties, as well as the very high GDP growth rates that were observed since 1968, had allowed a substantial increase in the tax burden since then¹¹.

As may be seen in table 2A, over the 1974-80 period there was a clear reduction in the tax burden. As a result of that trend the aggregate taxes-GDP ratio in 1980 was approximately 1.7 percentage points below the average ratio observed along the 1970-73 period, meaning an almost 7% fall in the burden. There was an important change in the composition of the aggregate tax revenue but the increase in the importance of direct taxes was not enough to offset the fall in the indirect taxes burden. A much sharper of all however was observed in government's disposable income as a proportion of GDP, that might be roughly associated to the net tax burden, which is the relative weight of aggregate taxes less what is given back to the private sector in the form of transfers and subsidies¹². Government's disposable income is certainly a better measure of what would be government's command over the economy's resources and production if it could have no recourse to an increase in public debt. During the 1970-73 period government's disposable income as a proportion of GDP was on the average almost. 17%. In 1980 it had been reduced to approximately 10%, as may be seen in table 2A.

¹¹ See Maneschi [1972] for a good synthetic account of the tax reform of 1966 and the improvements that were obtained in the efficiency of tax. collection and administration, as well as the resulting effects on tax revue.

¹² The difference between the net tax burden and government's disposable income is the fact that the later also takes into account other government current revenues, besides taxes.

Table 2A
Brazil, 1970 - 1980
Tax Burden and Government's Disposable Income

Year	As percent of GDP											
	70	71	72	73	74	75	76	77	78	79	80	
Tax Burden	25.96	25.06	25.37	26.30	26.-17	26.34	25.19	25.55	25.66	24.32	24.15	
Indirect Taxes	16.73	15.51	15.45	15.48	15.35	14.52	13.52	13.37	13.37	12.05	13.25	
Direct Taxes	9.23	9.55	10.42	10.82	10.82	11.32	11.67	12.18	12.29	12.27	10.95	
(+) Other Current Revenues (Net)	-1.10	0.83	-0.19	-0.16	-2.22	-0.76	-0.22	-1.55	-1.54	-0.53	-0.94	
(-) Subsidies	0.77	0.83	0.69	1.22	2.26	2.81	1.56	1.49	1.36	1.89	3.63	
(-) Transfers	9.51	8.23	8.52	8.22	7.45	8.26	8.60	9.15	10.21	9.75	9.50	
Assist. & Soc. Security	8.21	7.02	7.26	7.02	6.34	7.02	7.21	7.24	8.12	7.69	7.61	
Interest on Public Debt	1.30	1.21	1.26	1.20	1.11	1.24	1.39	1.91	2.09	2.06	1.39	
Government's Disposable Income	16.78	16.86	16.47	16.70	14.24	14.51	14.81	13.36	12.05	12.10	10.03	

Source: National Accounts, New Series, *Conjuntura Econômica*, January, 1987.

That sharp reduction must be ascribed in the first place to a rapid increase in subsidization. Subsidies as a proportion of GDP in 1980 were approximately three times higher than what they were, on the average, along the 1970-73 period¹³. But it must also be ascribed to a rise in the importance of transfers. That rise was less relevant in the case of assistance and social security transfers and much more relevant in the case of interest on public debt¹⁴. As in the national accounts the remaining transfers are in fact subtracted from other current revenues, it is the rapid increase in those latter transfers that explain why the item “other net current revenue” becomes negative after 1972, also contributing to the sharp reduction in government’s disposable income as a proportion of GDP.

It is important to analyse what was government’s adjustment to such a reduction in its disposable income, the main determinant of its command over the economy’s resources and production. As seen in table 2B, there was in fact a fall in government’s consumption as a proportion of BDP during the 1974-80 period. In 1980 that proportion was approximately 1.9 percentage points below the 1970-73 average, what means a 17% fall in the importance of government’s consumption. Part of that fall was due to the fact that government’s purchases of goods and services did not grow as rapidly as the aggregate output. But the largest part of it was the result of a steep decline in government’s payroll as a proportion of GDP from an average of 7.94 in 1970-73 to 6.18 in 1980, as shown in table 2B. The available evidence indicates that such decline stemmed basically from a fall in real wages and salaries paid by government and not from a reduction in the number of government’s employees per unit of GDP.

In fact, there is a striking paucity of reliable information on public employment in Brazil during the seventies. Resende and Castelo Branco [1976] estimate that in 1973 overall government employment (what includes decentralized agencies, but excludes public enterprises) was approximately 2.9 million, equivalent to 8.1% of the working population. But they are careful enough to warn about the precarious data base of their own estimate. For the eighties more reliable official estimates have become available. Government employment in 1980 would have reached 3.3 million, or approximately 7.6% of the working population¹⁵.

¹³ The several goods and services which were subsidized during the period under analysis include wheat, domestically consumed coffee and sugar, exported sugar, and metropolitan passenger rail transportation. Many other agricultural goods were also benefited through the government guaranteed minimum price policy. It should also be mentioned that liquid fuel prices were subsidized, as a result of the partial shifting of imported oil price rises and the maintenance of a single national price policy for each kind of fuel in a continental size country.

¹⁴ Notice that, following a common procedure, interest payments on public debt are treated in the Brazilian national accounts as transfers to the private sector. Therefore, the government’s disposable income concept implicitly considers those payments as a part of the private sector’s income, what goes against Barro’s well known argument. But the concept is perfectly consistent with the equally well know criticism to that argument, that basically points to the fact that economic agents are in general very differently affected by interest payments on public debt on one side, and the need to increase taxes in the future on the other side. See Barro [1974] and, for example, Buiter [1985].

¹⁵ As will be seen in table 3C in section 3.

Table 2B

Brazil, 1970-1980 – Government's Consumption and Savings

Year	As percent of GDP										
	70	71	72	73	74	75	76	77	78	79	80
Government's Consumption	11.32	11.01	10.71	10.41	9.74	10.64	10.51	9.43	9.67	9.77	9.01
Wages & Salaries & Payroll Taxes	8.29	8.23	7.91	7.34	6.78	7.45	7.17	6.57	6.91	6.89	6.18
Goods & Services	3.03	2.78	2.80	3.07	2.96	3.18	3.34	2.86	2.76	2.87	2.83
Government's Savings	5.46	5.85	5.76	6.29	4.49	3.87	4.30	3.92	2.37	2.32	1.08
Government's Disposable Income	16.78	16.86	16.47	16.70	14.23	14.51	14.81	13.36	12.04	12.09	10.08

Source: National Accounts, New Series, *Conjuntura Econômica*, January, 1987.

On the other hand, there is strong evidence that, at least in the federal central administration – which, according to Rezende and Castelo Branco was responsible for approximately ¼ of the overall government employment in 1973 – there was a substantial reduction in public employees' real wages and salaries along the seventies. Abreu [1984] estimates a 37% reduction from 1970 to 1980¹⁶. As the federal central administration's real expenditure on personnel increased 130% along the same period, he calls attention to the fact that there is room to believe that the “quantum” would have risen significantly. But he also carefully points out that such “quantum” would probably overestimate the actual behaviour of employment. Promotions, seniority rights and the fact that there was a considerable increase in military personnel's real salaries during the period would all make the “quantum” a distorted estimator of the number of employees. But there seems to be no doubt that there was some increase in the federal central administration employment. Reliable evidence on the evolution of both employment and salaries in other segments of the government sector is more difficult to obtain, but it is very hard to believe that the reduction in the importance of government's expenditure on personnel would have stemmed from any fall in the number of public employees¹⁷.

Notwithstanding the impressive fall in government's consumption as a proportion of GDP, it is clear that the thrust of the adjustment to the sharp reduction in government's disposable income actually fell upon its saving capacity, following the line of least political resistance. As shown in table 2B, in the early seventies government's savings were on the average equivalent to 5.84% of the GDP, what means that approximately 1/3 of government's disposable income was saved. That high savings propensity fell steadily from 1974 on, and in 1980 it had become something slightly above 10%. Government's savings as a proportion of GDP in that later year corresponded to less than 1/6 of what it used to be in the beginning of the decade.

¹⁶ See also Escobar [1984]. The federal central administration does not include decentralized federal agencies that carry on governmental activities.

¹⁷ It should be pointed out that even though there was a rise in military personnel's real salaries along the seventies, total military expenditure as a proportion of GDP, at 1980 prices, fell from more than 2% in 1970 to only 0.5% in 1980. The latter seems strikingly low by South American standard, since the corresponding percentages in 1980 were 2.9% in Argentina, 1.5% in Colombia, 6.4% in Chile and 7.2% in Peru.

Table 2C

Brazil, 1970-1980 – Revenues and Expenditures of Federal Public Enterprises

Year	As percent of GDP											Real Value Index Number – 1980 (1970 = 100)
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Total Revenue	9.72	9.72	10.87	11.79	15.00	16.43	16.89	16.40	18.35	19.00	21.53	221
Current Revenue	8.95	9.22	9.90	10.89	14.44	15.97	16.21	15.82	16.98	19.15	20.65	231
Operational Revenue	8.49	8.41	9.15	9.83	13.55	15.09	14.60	14.51	16.29	17.62	19.92	255
Units of Goods and Services	8.03	8.03	8.78	7.16	12.33	13.42	13.63	13.47	15.22	16.53	17.32	214
Subsidies	0.46	0.38	0.37	0.68	1.22	1.66	0.96	0.93	1.07	1.03	1.70	370
Other Current Revenues	0.46	0.81	0.83	0.97	0.89	0.89	1.61	1.31	0.69	1.53	0.73	159
Capital Revenues	0.67	0.12	0.07	0.12	0.15	0.03	0.01	0.00	0.37	0.20	0.32	48
Equity Capital from Government	0.10	0.31	0.72	0.74	0.25	0.51	0.67	0.58	0.63	0.35	0.23	228
Govern Transfers	0.00	0.08	0.09	0.12	0.15	-	0.00	0.00	0.86	0.19	0.32	-
Total Expenditure	9.83	10.36	11.59	10.38	16.41	17.85	28.39	18.73	22.98	32.10	30.12	386
Current Expenditure	7.05	7.83	7.77	8.00	11.21	12.29	12.03	12.46	14.64	18.26	19.96	283
Operational Expenditure	5.66	6.64	6.50	6.92	9.70	10.49	10.35	10.15	12.05	13.72	15.92	201
Taxes, Salaries and Payroll Taxes	1.82	1.82	1.80	1.59	1.88	1.98	1.03	1.95	2.02	2.53	2.50	137
Goods and Services	3.60	4.39	4.43	4.70	7.43	7.06	0.14	7.61	9.41	8.85	11.26	313
Production Relation Taxes	0.21	0.44	0.57	0.62	0.39	0.65	1.39	0.65	0.63	2.36	2.19	1013
Others	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Other Current Expenditures	1.40	1.18	0.96	1.10	1.52	1.79	2.53	2.21	2.60	4.54	4.05	209
Financial Expenditures	0.28	0.30	0.55	0.30	0.56	1.05	1.36	1.30	1.97	3.01	2.09	1032
Provisions	0.21	0.28	0.23	0.24	0.23	0.14	0.11	0.05	0.08	0.03	0.06	29
Inc. Profit Tax	0.91	0.60	0.38	0.56	0.72	0.27	1.05	0.96	0.54	1.46	1.09	120
Capital Expenditure	2.78	2.53	3.02	2.08	5.20	5.56	7.51	6.27	0.34	13.24	10.16	366
Fixed Investment	2.54	2.24	3.65	2.19	4.11	4.65	6.56	6.20	8.02	12.33	8.20	208
Other Capital Expenditures	-0.07	0.29	0.16	0.20	1.09	0.90	0.96	0.06	0.31	1.52	1.76	-
Borrowing Requirements	0.11	0.65	0.72	-1.40	1.41	1.37	3.50	2.33	4.63	12.50	8.59	8005

Source: Captured on the basis of data obtained in Manson Costa [1984], Correa do Lago et. al. [1984] and Manson Costa [1985].

Public Enterprises

As mentioned above, in order to have a complete picture of the behaviour of the public sector as a whole, one has to complement the analysis just developed with an account of what happened to public enterprises during the 1970-80 period. Table 2C was computed using what seems to be the best available aggregate, data on the subject, that unfortunately refer only to federal public enterprises. Actually, those make up by far the most important part of the public enterprises' sector in Brazil, but is important to have in mind the fact that state and local enterprises are not included in the data that will be used here¹⁸.

Table 2C presents the evolution of the aggregate revenue and expenditure of federal non-financial public enterprises, as a proportion of the GDP, broken down in their main components. It surely would not make any sense to just add up the total revenue or expenditure figures obtained in that table to the ones that may be obtained in table 2A, which refers to the government sector, in order to have a full picture of the evolution of the size of the public sector as a whole during the period. The picture that one would get would be totally distorted. Government's expenditure as a proportion of GDP is a good indicator of its potential command over the economy's aggregate output. However, that is certainly not true in the case of public enterprises' expenditures. More than 50% of those expenditures have been made on the purchase of intermediate goods and services, as may be checked in table 2C. That has nothing to do with command over the aggregate output of final goods and services. Another way to make that point clear is to observe that if one adds up the expenditures of all enterprises – public and private – in any economy, one would surely obtain a sum well in excess of that economy's GDP, as is well known¹⁹.

A more careful approach is needed therefore. There is no doubt however that the data presented in table 2C indicate a substantial increase in the importance of public enterprises in the Brazilian economy over the seventies. Almost every expenditure or revenue component shown in the table has risen considerably as a proportion of the GDP. Before examining table 20 in detail, it should be pointed out that there is at least one very simple explanation for that trend. The main sectors that are dominated by public enterprises in Brazil have grown much faster than the economy as a whole. To avoid the possibility of any interpretation difficulties that could be raised before the presentation of evidence in support of this point based on value of production data, the evolution of the main public enterprises' physical output indicators during the seventies is presented in table 2D²⁰.

¹⁸ An estimate referring to 1978, ascribes 80% the total net worth of non-financial public enterprises in Brazil to federal public enterprises. See Visão [1979], p. 484.

¹⁹ See Werneck [1986b] for a detailed discussion on the misleading conclusions (and policy proposals) that have been drawn from a careless interpretation of public enterprises' expenditures as a proportion of GDP in Brazil.

²⁰ Such interpretation difficulties would stem from the effects of the pricing policies for the goods and Services produced by public enterprises on the evolution of their current value of production data.

Table 2D

Brazil, 1970-1979

Physical output of selected public enterprises products by unit of GDP

Indexes	Output indexes (1970 = 100)	Sectoral output per unit of real GDP indexes (1970 = 100)
Year	1979	1979
Real GDP	210	-
Iron ore	272	130
Flat steel	273	130
Electricity	320	152
Rail freight	351	167
Telecommunications ¹	312	148
Postal services ²	397	189
Processed crude oil	218	104
Petrochemical naphtha	540 ³	257 ³

Notes: (1) Number of installed telephone terminals; (2) Number of posted objects; (3) For naphtha production the adopted base year was 1972.

Sources: Output indexes for iron ore, flat steel, electricity and rail freight were computed from data presented in Trebat [1983]. Data needed for the remaining indexes were obtained in *Anuário Estatístico do Brasil*, IBGE, several issues.

It may be seen that during that period the rise in physical output per unit of GDP was 30% for both iron ore and flat steel, 48% for telecommunications, 52% for electrical energy, 67% for rail freight, 89% for postal services and 157% for petrochemical naphtha. The only case of growth in line with the GDP was oil refining. It has to be kept in mind therefore that the demand for the goods and services that have been supplied by public enterprises has grown much more rapidly than the economy as a whole, probably as a result of the modernization and structure, changes that have taken place in the Brazilian economy. As public enterprises in Brazil are basically involved in public utilities and intermediary goods and services production, the relative growth of the demand for their output is, to a large extent, bound to be indirectly determined by the evolution of the economy's final demand pattern²¹.

The analysis of the data presented in table 2C may become more interesting if such data is initially reorganized as shown in table 2E. The first thing to notice about that latter table is that federal public enterprises' aggregate sales of goods and services were substantially targeted in operational

²¹ It should be pointed out that part of the fast growth in the demand for public enterprises' output during the period stemmed from import substitution (naphtha, for example) and export expansion (iron ore, for example). Moreover, it should be pointed out that in certain cases, as for example in the steel sector, the relatively fast demand growth was snared in approximately equal terms by both public and private enterprises. A clearly defined and enduring steel market division has restrained public enterprises to flat steel production, leaving non-flat steel to be produced by private enterprises. Therefore, the fact that public enterprises' steel output has grown much faster than real GDP does not mean that they have changed significantly their share in the steel sector. In 1980, public enterprises were responsible for a little more than 60% of the total raw steel production in Brazil, approximately the same share observed in the mid-sixties.

expenditures during the whole 1970-80 period. The resulting operational surplus, added to other current revenues, were large enough to allow those enterprises to run a sizeable current surplus till almost the end of the period, when current deficits started to occur. From 1970 to 1978, their aggregate current surplus correspond on the average to more than 2% of the GDF. That means that a significant part of their capital expenditures was financed by internally generated funds. That was particularly true in the early seventies when the self-financing ratio was in the 40-50% range, reaching almost 90% in 1973.

Of course, many different factors contributed to the fall and eventual disappearance of federal public enterprises' current surplus. Tables 2C and 2E help to pinpoint some important ones. The evolution of both operational expenditures was totally out of line with the evolution of the revenue from the sales of goods and services. While the latter increased 114% as a proportion of GDP from 1970 to 1980, the rise in operational expenditures was more than 180% and in other current expenditures almost 190%. The reason for that may be examined more fully using table 2C.

Starting on the analysis of the operational expenditure components, it may be observed that from 1970 to 1980, again as a proportion of GDP, outlays on goods and services increased 213%, those on wages and salaries 37% and those on production related takes almost 1000%. According to the relative evidence, the sales observed in the expenditures was a result of a fast increase in employment. In fact, as shown in table 2F, although there was a 29% growth in the main federal public enterprises' employment along the seventies, employment unit of GDP fell almost 40%. By the end of the decade, public enterprises' personnel as a proportion of total manufacturing employment had fallen significantly, as also shown in table 2F²².

The combination of the rise in public enterprises' outlays on wages and salaries as a proportion of GDP, on one side, and the reduction of their employment per unit of GDP, on the other side, constitutes a fairly sound evidence that remuneration levels may have increased considerably over the seventies. Part of the trend may of course be explained by the growing importance of more skilled personnel in those enterprises as a result of structural changes in their output mix. However, part may also be explained by faster growth in public enterprises remuneration levels *vis-à-vis* those prevailing in the private sector²³.

²² In the case of railroads there was a 24% cutback in the number of employees along the seventies, as may be seen in table 2F.

²³ In a recent study, Macedo [1985] found out that in the early eighties public enterprises' salary levels were in general significantly higher than those offered by large private firms operating in the same sectors. See also Bacha [1974].

Table 2E
Brazil, 1970-1980
Federal public enterprises' current and capital account

As percent of GDP

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Current account											
Sales of goods and services	8.02	8.03	8.78	9.16	12.33	13.42	13.63	13.47	15.22	16.58	17.26
(-) Government expenditures	5.66	6.64	6.80	6.92	9.70	10.49	10.35	10.15	12.05	13.72	11.90
Other surplus or deficit	2.37	1.39	1.90	2.84	2.43	2.93	3.28	3.32	3.17	2.06	1.29
(+) Other current revenues	0.46	0.81	0.83	0.97	0.89	0.89	1.61	1.31	0.69	1.52	0.78
(-) Other current expenditures	1.40	1.18	0.96	1.10	1.50	1.79	2.53	2.31	2.60	4.54	1.25
Other surplus of deficit	1.43	1.02	1.85	2.11	2.00	2.03	2.36	2.32	1.26	-0.15	-2.03
Capital account											
Capital expenditure	2.78	2.53	3.22	2.38	5.20	5.56	7.51	6.27	8.34	13.84	10.16
(-) Capital revenue	0.67	0.12	0.09	0.12	0.15	0.00	0.01	0.00	0.37	0.20	0.02
(+) Other surplus or deficit	1.43	1.02	1.85	2.11	2.00	2.03	2.36	2.32	1.26	-0.15	-2.02
Financial requirements	0.68	1.10	1.08	0.15	3.05	3.53	5.15	3.93	6.71	13.79	11.01
Public enterprises from government	0.56	0.76	1.17	1.54	1.63	2.17	1.63	1.51	2.07	1.40	2.25
Other capital from government	0.10	0.31	0.72	0.74	0.25	0.01	0.67	0.58	0.63	0.28	0.23
Government taxes	0.46	0.38	0.87	0.48	1.72	1.66	0.96	0.93	1.07	1.03	1.30
Government payroll	0.00	0.08	0.08	0.12	0.15	-	0.00	0.00	0.36	0.19	0.38
Other government expenditures	0.11	0.65	0.72	-1.40	1.41	1.87	3.50	2.08	4.63	12.20	0.39

Table 2F

Brazil, 1970-79

Evolution of Employment in selected Large Public Enterprises

Sector	Employment			Employment per Unit of GDP (1979 = 100)	Percent of manufacturing employment	
	Number of employees		Index number (1970 = 100)		1970	1979
	1970	1979	1979			
Mining	11,115	19,257	173	82	0.42	0.41
Steel	31,881	60,035	188	89	1.21	1.29
Petrochemicals	36,114	51,461	142	67	1.37	1.11
Telecommunications	40,253	48,610	121	57	1.53	1.05
Electricity ¹	39,889	122,053	306	145	1.51	2.62
Railroads	148,492	112,656	76	36	5.64	2.42
Postal Services	63,312	64,033	101	48	2.40	1.38
Total	371,056	478,105	129	61	14.01	10.28

Note: (1) The increase in the employment of public enterprises in the electricity sector is partly explained by the rationalization in the late seventies of "Light", the large Canadian owned electrical company that supplied the Rio de Janeiro and São Paulo metropolitan areas.

Source: Employment in postal Services and in manufacturing from *Anuário Estatístico do Brasil*, IBGE. Employment in remaining sectors from Trebat [1983], p. 157.

Be that as it may, there is no doubt that the increase in public enterprises' wage and salary bill as a proportion of GDP was much less important to explain the fall in their current surplus over the period than the evolution of the other two operational expenditure components. Particularly important was the 2/3 of public enterprises total operational expenditures in the early seventies. That behaviour was largely dominated by the rise in the price of imported oil, that gave place to the two clear shifts observed in the series in 1974 and 1980. On the other hand, one should remember that Brazil was notoriously slow in adjusting domestic oil products prices to the changing world market conditions²⁴. When the adjustment came, a large part of it took the form of higher taxes on oil products. That is what explains the sudden increase in the importance of public enterprises' expenditures on production related taxes from 1979 on, as shown in table 2C.

In what concerns the evolution of other current expenditures, the remarkable fact was the explosive behaviour of the financial expenditures. From 1970 to 1980, those expenditures, measured as a proportion of GDP, increased almost 1,000%, as may be observed in table 2C. As will be seen below, notwithstanding their falling self-financing capacity, federal public enterprises increased significantly their investment effort along the seventies. A growing fraction of investment outlays was financed by foreign debt. Financial costs rose accordingly, and as international interest rates soared by the end of the decade public enterprises were very badly affected, particularly after the maxi-devaluation in late 1979. The fact that their profits became taxable in the mid-seventies contributed to a further increase in their current expenditures.

There were therefore many factors from the expenditure side contributing to the reduction and eventual disappearance of federal public enterprises' current surplus along the seventies. However, the impact of those factors could have been extensively offset by the effects of the pricing policies for the goods and Services produced by those enterprises. But as inflation rates tended to increase from 1974 on, there was a rising temptation to use public enterprises' prices and tariffs as anti-inflation policy instruments. That led to a consistent reduction in real prices and tariffs along the whole second half of the decade, the only exception being oil products prices, as may be seen in table 2G. From 1975 to 1980 that reduction reached approximately 24% in the case of electricity, 42% in the case of telecommunications, 30% in the case of flat steel, 16% in the case of postal services and 39% in the case of gas. As mentioned above, the rise in real prices of oil products was more the result of tax rises than of an increase in prices received by the producer. In consequence of the adopted pricing policies, the growth of public enterprises' aggregate sales of goods and services over the seventies was totally out of line with the rise in their costs. While aggregate operational expenditures, as a proportion of GDP, increased 181% and current expenditure 183%, the rise in aggregate sales of

²⁴ As will be seen below in table 2G, in 1978 fuel oil and diesel oil real prices were only 35% higher than 1973.

goods and Services as per cent of GDF was only 114%. The current surplus had to drop accordingly. Falling real prices and tariffs meant to transfer an enlarging part of the benefits that were stemming from the expensive investment projects public enterprises had been developing along the seventies to the rest of the economy. That increased even more those Enterprises' difficulties to cope with the soaring interest payments on the huge debts they had assume to be able to finance those very investments.

Table 2G
Brazil, 1970-1980
Selected real price indexes of public enterprises' outputs (1975 = 100)

Year	Electricity ^a	Telecommunications ^b	Flat steel ^c	Postal services ^d	Gasoline	Diesel oil	Fuel oil ^e	L P. Gas
1970	94.10	-	98.67	23.04	50.17	70.25	72.78	69.90
1771	92.85	-	99.49	42.99	51.58	78.81	76.62	72.78
1972	100.12	93.37	190.78	66.74	54.62	85.24	82.39	78.31
1973	97.10	105.00	98.71	113.23	55.47	84.27	82.78	77.72
1974	92.85	96.23	94.52	96.91	85.54	90.09	92.83	95.00
1975	100.00	100.00	190.00	100.00	100.00	100.00	100.00	100.00
1776	91.47	95.04	93.53	89.80	120.78	106.10	110.82	93.03
1977	85.05	92.20	90.87	76.42	122.25	120.32	114.72	93.14
1978	80.54	84.29	90.26	101.92	115.11	115.98	111.78	88.83
1979	78.72	77.39	80.90	100.35	117.00	128.89	133.91	75.63
1980	76.10	57.71	69.80	83.19	166.67	132.33	231.41	61.21

Notes: (a) Average tariff per Kw; (b) Telephone tariff; (c) Unplated flat steel; (d) Simple letter tariff; (e) Fuel oil [A/BPF].
All prices and tariffs deflated using the General Price Index (IGF-DI).

Sources: CNP, ECT, ELETROBRAS, SIDERBRAS and TELEBRAS.

As may be observed in table 2E, federal public Enterprises became increasingly dependent on government resources and debt capital to carry on their investment programs. Actually, from 1979 on, government transfers and subsidies were needed to cover part of their aggregate current expenditures. As also shown in table 2E, federal public Enterprises' aggregate financing requirements were merely 0.67% of GDP in 1970, when they were equivalent to less than 1/4 of their capital expenditures. Ten years later those requirements corresponded to 10.8% of the GDP. Around 1/5 of the financing came from government funds and 4/5 from borrowing.

Such fast increase in the financing requirements is due not only to the behaviour of public enterprises' current surplus, but also to a significant enhancement of their investment effort. According to table 2C, federal public enterprises' fixed investment, as a proportion of GDP, increased from 2.84% in 1970 to 8.20% in 1980, almost tripling during the period. That meant a rise in the share of federal public enterprises' fixed investment in the economy's total gross fixed investment from 15.1% in 1970 to 37.3% in 1980. A large part of that rise reflects the crucial role attributed to

public enterprises in the import-substituting and export promoting investment program, that constituted the core of the long-run strategy of adjustment of the Brazilian economy to the external shocks in the seventies²⁵. But it also reflects the fast growth over the period in the demand for goods and Services produced by those enterprises – already observed in table 2D – and the above average incremental capital-output ratios that prevail in most of the sectors in which public enterprises operate in Brazil.

Although public and private investment played complementary roles, one may ask why such a prominent role in the investment effort was attributed to public enterprises during the seventies, precisely when the economic policy was most conservative and market oriented in Brazil. The key to the proper answer to that question is the realization of the financing strain that enduring rapid growth is bound to put on any economy. Facing successive years of fast expanding demand and continuously endeavouring to keep their market shares, private domestic enterprises began to present clear signs of financial overexertion by the mid-seventies. Actually, as the Brazilian financial system lacks a strong new issues stock market, private domestic enterprises have to finance their expansion relying basically on retained earnings and borrowing. With the acceleration of the economy's growth in the early seventies and the relative exhaustion of the possibility of getting higher profit rates through real wages reduction, private domestic enterprises plunged into debt as they tried to keep pace with the expansion of their respective sectors.

Meanwhile, faced with financially constrained private domestic enterprises on the one hand, and the need to expand certain sectors very rapidly, and yet wishing to avoid foreign dominance of such sectors, on the other, government was often left with no choice but to resort to public enterprises, in order to prevent the formation of bottlenecks that could eventually jeopardize the whole growth project. It was remarkable that a long period of strong conservative control of the Brazilian economic policy ended up in giving the public sector an unprecedented importance in the economy, certainly much greater than that which would seem appropriate to the very mentors of such policy, back in the mid-sixties. The already mentioned strong commitment to a rapid expansion of the economy – viewed as important in helping to legitimize the authoritarian nature of the regime – seems to have overcome certain aspects of the liberal economic policy pledge, forming a pragmatic stand on some issues, especially those related to the role of public enterprises²⁶.

²⁵ See again Batista [1986] for further details on this point. It is important to notice that a large part of the import substituting effort was left to private enterprises. A good example is the investment program designed to permit the widespread substitution of alcohol for gasoline as a car fuel. Though strongly subsidized, the investment effort was almost totally carried on by private enterprises.

²⁶ It should be mentioned that along the seventies the Brazilian government made every effort to increase private domestic enterprises financial ability to grow. The varied set of policies, mainly implemented through the official National Economic Development Bank, involved highly subsidized partially indexed long term loans, subscription of private enterprises' equity capital by the Bank, subsidized financing of voting shares subscription by controlling shareholders, as well as a raise in the upper legal fraction of the total equity capital that a corporation may issue in the form of non-voting

The Consolidated Public Sector

Table 2H was the result of an effort to consolidate the available separate information on the behaviour of the government sector, on one hand, and federal public enterprises on the other hand, which have been used in this section. The table reveals that the rise in the importance of public sector's fixed investment was substantially less remarkable than in the case of federal public enterprises' fixed investment only. In 1970, public sector's fixed investment already represented 7.26% of the GDP or 38.6% of the economy's gross fixed capital formation. Ten years later the corresponding percentages were 10.52% and 47.80%. The reason for that was the fall in the importance of government's investment along the decade. It is clear that most of the public sector's investment effort along the seventies was concentrated in the expansion of production capacity within public enterprises. Public social investment was undoubtedly relegated to a secondary position. The maintenance of the rapid growth strategy required the postponement of a long needed deeper social investment effort. Rapid growth in bound to be an extremely disharmonic and strenuous process. The lagging behind of social investment was only one of the many clear signs of such disharmony in Brasil during the seventies²⁷.

After subsidies, transfers and "other government capital expenditures" are re-estimated net of flows to federal public enterprises, one obtains in table 2H adjusted estimates of government's disposable income, that are somewhat higher than those presented in table 2B above. One also gets much higher estimates of the importance of government's savings. But the fall in those savings over the seventies seems to have been even steeper than that observed in table 2B.

shares. Even so private domestic enterprises operations in the fastest growing sectors remained financially strained. Some of those policies amounted to a substantial giveaway of public resources to private domestic enterprises, a practice that was carried on the very lax limits of what was politically feasible given the authoritarian nature of the regime. For a discussion of that experience and the difficulties involved in channelling enough publicly generated savings in private domestic enterprises, in order to allow them to expand as fast as the rapid growth program required them to, see Werneck [1977] and Werneck [1980].

²⁷ One may turn to Kornai [1972] for an insightful discussion on the idea of disharmony as related to economic growth.

Table 2H

Brazil, 1970-1980 – Public sector's consolidated capital account

	1970	1971	1972	1973	1974	1975	1976	1977	As percent of GDP		
									1978	1979	1980
Public sector's capital expenditure											
Government's capital expenditure	6.54	5.46	5.13	5.22	3.78	6.08	5.37	4.85	4.34	3.02	3.47
Fixed investment ^a	4.42	4.25	3.86	3.99	4.93	4.10	4.05	3.30	3.14	2.44	2.32
Other capital expenditure	2.12	1.21	1.27	1.32	-0.25	1.93	1.32	1.55	1.20	0.58	1.15
Public enterprises' net capital expenditure	2.10	2.41	3.72	2.27	5.05	5.56	7.51	6.26	7.96	13.65	9.84
Fixed investment ^b	2.84	2.24	3.65	2.19	4.11	4.66	6.56	6.20	8.02	12.33	8.20
Other net capital expenditure	-0.74	0.17	0.07	0.08	0.94	0.90	0.95	0.06	-0.06	1.32	1.64
Total public sector's capital expenditure	8.64	7.37	8.85	7.49	8.83	11.64	12.83	11.11	12.30	16.67	13.31
Public sector's capital expenditure financing											
Total tax burden	25.96	25.06	25.87	26.30	26.17	26.34	25.19	25.55	25.66	24.32	24.15
(+) Other government net current revenue ^c	1.10	6.33	-3.18	-0.16	-2.22	-0.76	-0.22	-1.55	-1.54	-0.58	-0.94
(-) Subsidies to de private sector properly ^d	0.31	9.42	9.32	0.54	1.04	1.15	0.60	0.56	0.79	0.86	1.98
(-) Transfers to the private sector properly	7.51	3.15	8.43	8.10	7.30	8.26	8.60	9.15	9.85	9.56	9.18
Adjusted government's disposable income	17.84	17.32	16.93	17.50	15.61	16.17	15.77	14.29	13.48	18.32	12.18
(-) Government's consumption	11.22	11.01	10.71	10.41	9.74	10.64	10.51	9.48	9.67	9.77	9.01
Adjusted government's Savings	5.92	6.31	6.32	7.09	5.87	5.53	5.26	4.06	3.81	3.55	3.09
(+) Public enterprises' current surplus or deficit	1.43	1.02	1.85	2.11	2.00	2.03	2.36	2.32	1.26	-0.15	-2.02
Public sector's savings	7.35	7.33	8.07	9.20	7.87	7.56	7.62	7.18	5.07	3.40	1.07
Borrowing requirements	1.99	3.57	0.81	-1.73	0.95	4.07	5.24	3.84	7.23	13.25	11.21
Government's	1.18	-0.03	0.09	-0.33	-0.46	2.72	1.74	1.51	2.60	0.95	2.62
Public enterprises'	0.11	3.65	0.72	-1.40	1.41	1.37	3.50	2.33	4.63	12.32	0.59
Total public sector capital expenditure financing	8.64	7.87	8.65	7.49	8.83	11.64	12.83	11.11	12.30	16.47	13.31

Notes: (a) excludes equity capital to federal public enterprises; (b) net of federal public enterprises' capital revenue; (c) excludes subsidies to federal public; (d) excludes transfer to federal public enterprises.

According to the data shown in table 2H, public sector's Consolidated borrowing requirements would have reached more than 11% of the GDP in 1980, after a very fast increase in the late seventies. It was not possible to obtain information on all the components of public sector's debt over the seventies. Table 2I presents the evolution of some of those components as per cent of GDP, but unfortunately does not include any information on public enterprises' or decentralised agencies' domestic debt. As shown in the table, the increasing indebtedness of the public sector stemmed less from a rising stock of government bonds held by the public than from an explosive increase in foreign debt and in private sector's foreign currency denominated deposits in the Central Bank. That made the outstanding debt extremely vulnerable to the behaviour of the real exchange rate. The value of the outstanding debt as a proportion of GDP increased significantly in the wake of the late 1979 maxi-devaluation. On the other hand, public sector's interest payments would rise steeply as international interest rates soared in the late seventies²⁸.

3. Public Sector Behaviour during the Debt Crisis, 1981-85

The Government Sector

Partly as a result of the recession and partly as a result of the effects of the sharp acceleration of inflation on the real value of collected taxes, the tax burden was substantially reduced from 24.1% in 1980 to 21.7% in 1984, as may be seen in table 3A. But in consequence of the austerity measures designed to curb public expenditure, there was a significant cutback of subsidies as a proportion of GDP; from 3.63% in 1980 to 1.58% in 1984. The importance of assistance & social security transfers in 1984 was practically the same observed in 1980, notwithstanding the natural increase in their importance during the 1981-83 recession. Interest payments on public debt as per cent of GDP, on the other hand, were more than tripled over the same period. The net result was that in only four years' government's disposable income as a proportion of GDP was practically halved, falling from slightly more than 10% in 1980 to 5.43% in 1984.

²⁸ See Cruz [1984] for an account of the explosive growth of the public sector's external debt along the seventies.

Table 2I

Brazil, 1970-1980

Selected public sector's debt components

Year	(A) Government bonds held by the public as % of GDP	(B) Private sector's foreign currency deposits in the general bank as % of GDP	Registered public sector's foreign debt			Total As % of GDP (A) + (B) + (E)
			(C) US\$ Billion	(D) as % of the total foreign debt	(E) as % of GDP	
1970	1.11	0.00	3.23	65.46	7.62	8.73
1971	0.91	0.11	4.01	62.81	8.12	9.15
1972	4.87	0.11	-	-	-	4.98
1973	5.44	0.07	7.48	59.10	9.39	14.09
1974	3.80	0.03	11.01	57.36	10.44	14.27
1975	4.01	0.06	13.92	59.21	11.22	15.29
1976	3.99	0.06	17.64	61.80	11.51	15.56
1977	4.69	1.02	21.96	62.80	12.42	18.12
1978	4.97	2.00	30.20	65.15	15.03	22.01
1978	3.98	3.31	35.51	69.12	15.72	22.97
1980	2.64	3.33	39.89	70.61	16.64	22.65

Source: Carneiro [1986b] and World Bank, World Debt Tables, various issues.

Table 3A

Brazil, 1980-1984

Tax Burden and Government's disposable income

Year	As percent of GDP				
	80	81	82	83	84
Tax Burden	24.15	24.44	26.53	24.87	21.72
Indirect Taxes	13.25	12.81	13.20	12.71	10.38
Direct Taxes	10.95	11.63	13.33	12.16	11.34
(+) Other Current Revenues (Net)	-0.94	-1.07	-1.34	-1.53	-0.73
(-) Subsidies	3.63	2.66	2.60	2.63	1.58
(-) Transfers	9.50	-10.39	12.46	12.49	13.98
Assistance & Social Security	7.61	8.15	9.00	8.30	7.73
Interest on Public Debt	1.89	2.24	3.46	4.19	6.25
Government's disposable income	10.08	10.32	10.13	8.22	5.43

Source: National Accounts, New Series, *Conjuntura Econômica*, January, 1987.

That drastic fall in government's disposable income was accompanied by a more modest 1/10 reduction in the importance of government's consumption, as shown in table 3B. Such a reduction was basically obtained by the cutback of expenditures on wages and salaries as a proportion of GDP. But that cutback was not at all a consequence of any fall in public employment. Quite on the contrary, as may be seen in table 3C, government employment was increased by more than 32% from 1979 to 1984. Public employment per unit of GDP was risen in excess of 20% in only four years and the share of public employees in the working population experienced a significant rise. Although the

appearance of mounting political pressures to create public employment opportunities during a recession is only natural, it is widely accepted that a large part of the rise in public employment over the period may be ascribed to the military regime's, effort to win the 1982 elections at any price. Be that as it may, the fact is that the cutback in the importance of government's expenditure on wages and salaries was only possible, therefore, due to a sharp reduction in public employees' remuneration levels. As shown in table 3C, real government expenditure on wages, salaries and payroll taxes per public employee was reduced in excess of 20% over the period.

But again, as happened in the seventies, the thrust of the adjustment to the rapidly shrinking government's disposable income fell upon government's savings. However, as they already represented only a little more than 1% of the GDP in 1980, those savings actually became negative, reaching -2.8% of the GDP in 1984, as may be seen in table 3B. In other words, government's disposable income in that year was not enough to finance even 2/3 of government's consumption, notwithstanding the observed fall in the latter's importance since 1980.

Public Enterprises

In what concerns the analysis of the behaviour of public enterprises during the eighties, one has to resort to different data., since the data used in the previous section is not available for that period. Since late 1979, the Federal Government has tried to establish a firmer grip on its public enterprises, submitting them to the financial control of a new agency especially created for that purpose: The Public Enterprises Control Secretarial (SEST). That agency has produced a rich flow of information on federal public enterprises, covering the period since 1980. However, as it deals basically with cash flow data, series obtained from such data are not directly comparable to those used in section 2. Besides, SEST's data is broken down in a way that is not perfectly consistent with the revenue and expenditure classifications used in the previous section.

Table 3D, computed from SEST's data, presents the evolution of aggregate expenditures and revenues of public enterprises, as a proportion of GDP, from 1980 to 1985²⁹.

²⁹ As the analysis conducted here deals only with the aggregate accounts of federal public enterprises, it hides the widely different experiences of the various enterprises. See Werneck [1985] for a detailed analysis of the behaviour of the 20 largest federal public enterprises groups in the 1980-83 period. The varied range of experiences which emerge from that analysis may be illustrated by some striking comparisons involving Petrobras, the oil group, and Siderbras, the steel group. From 1980 to 1983, real investment outlays increased by 8.6% in the former and fell almost 67% in the latter. During the same period, financial expenditures, as a proportion of current expenditures, rose from 1.3% to 4% in Petrobras while it increased from 9.7% to 34.6% in Siderbras.

Table 3B
Brazil, 1980-1984
Government's consumption and savings

Year	As percent of GDP				
	1980	1981	1982	1983	1984
Government's consumption	9.01	9.24	10.50	9.58	8.24
Wages & Salaries & Payroll Taxes	6.18	6.40	7.40	6.56	5.63
Goods & Services	2.83	2.84	3.10	3.03	2.61
Government's savings	1.08	1.09	-0.39	-1.36	-2.82
Government's disposable income	10.08	10.33	10.11	8.22	5.43

Source: National Accounts, New Series, *Conjuntura Econômica*, January, 1987.

Table 3C
Brazil, 1979-1984
Government employment

Year	Government employment				Real expenditure on wages, salaries & payroll taxes per employee* (1979 = 100)
	Thousand employees	Index (1979 = 100)	% working population	Per unit of real GDP (1979 = 100)	
1979	3137.00	100.00	7.54	100.00	100.00
1980	3313.00	105.61	7.66	96.74	95.74
1981	3516.00	112.08	7.83	106.17	91.52
1982	3733.00	119.16	8.01	111.95	98.44
1983	3842.00	122.47	7.93	117.97	80.76
1984	4145.00	132.13	8.23	120.43	79.61

Note (*): Deflated using INPC, National Consumers' Prices Index.

Source: Ministério do Trabalho, *Relação Anual de Informações Sociais, RAIS*; *Anuário Estatístico do Brasil*, IBGE and National Accounts, New Series.

Table 3D
Brazil, 1980-1985
Federal public enterprises' revenues and expenditures

Year	As percent of GDP					
	1980	1981	1982	1983	1984	1985
Total revenue	14.32	16.05	15.61	16.74	16.61	16.85
Operational revenue	11.70	12.82	12.58	12.94	13.80	12.98
Other revenues	1.00	1.87	1.95	2.97	1.96	2.35
Resources received from Government	0.82	1.35	1.03	0.82	0.85	0.92
Total expenditure	16.41	18.50	18.65	19.13	18.79	18.09
Current expenditure	11.40	12.77	12.97	14.24	14.09	13.51
Operational expenditure	10.62	11.33	11.03	11.99	11.56	10.93
Wages & salaries & payroll taxes	1.91	2.18	2.35	1.97	1.70	1.37
Other operational expenditures	8.71	9.15	8.65	10.02	9.87	9.06
Other current expenditures	0.78	1.44	1.97	2.25	2.53	2.58
Financial expenditures	0.78	1.44	1.97	2.25	2.53	2.58
Capital expenditure	5.01	5.73	5.68	4.89	4.70	4.57
Fixed investment	4.50	5.10	5.06	3.68	3.31	3.15
Other capital expenditure	0.51	0.63	0.62	1.22	1.3?	1.43
Borrowing requirements	2.09	2.45	3.03	2.40	2.18	1.84

Source: Brazil, SEPLAN/SEST [1986b].

Operational expenditures as percent of the GDP were practically equal in 1980 and 1985, notwithstanding the relatively rapid increase in public enterprises' outputs, as will be seen below. The importance of expenditures on wages and salaries was somewhat enhanced in 1981 and 1982, but was steadily reduced since then so as to reach in 1985 a percentage of GDP slightly lower than the one observed in 1980.

Before proceeding with the analysis of the data presented in table 3D, it is interesting to look into what happened to public enterprises' employment during the period with the help of table 3E. In four of the eight sectors considered there was an increase in federal public enterprises' employment, but the total number of employees in federal public enterprises increased only slightly more than 3% from 1980 to 1985. As the table also shows, the relatively rapid growth in the physical output indicators suggests that output per employee in federal public enterprises has risen significantly along the eighties, the rise ranging from 27% in mining to 147% in domestic oil production. Of course, that does not necessarily mean that federal public enterprises have become more efficient, since operating capital stock per employee has also risen considerably over the same period.

Table 3E

Large federal public enterprises' employment and physical output indicators by sector

	Physical output indexes (1980 = 100)		Employment (h)						Physical output per employee index (1980 – 100)	
			1980		1983		1985			
	1983	1985	Thousand	Index (1980 = 100)	Thousand	Index (1980 = 100)	Thousand	Index (1980 = 100)	1983	1985
Mining ^a	85.39	121.03	23.42	100.00	26.05	111.24	22.19	94.74	76.76	127.74
Steel ^b	96.81	140.43	71.21	100.00	72.22	101.42	75.00	105.32	95.46	133.34
Electricity ^c	115.69 ^j	153.59 ^j	33.44 ⁱ	100.00 ^j	31.61	94.51 ^j	32.19	96.26 ^j	122.41 ^j	159.56 ^j
Telecommunications ^d	134.66	157.19	79.89	100.00	32.27	102.90	82.22	102.91	180.77	152.74
Railroads ^e	89.43	112.08	87.26	100.00	85.06	96.81	87.19	99.24	92.37	112.94
Postal services ^f	114.29	-	68.50	100.00	66.84	105.25	69.81	109.92	100.59	-
Harbour services ^g	103.73	124.59	26.50	100.00	23.31	87.99	23.23	87.60	117.09	142.10
Oil & petrochemicals			40.07	100.00	45.50	113.53	48.73	121.61		
Processed crude oil	93.20	-							82.09	-
Domestic oil production	180.78	300.00							159.19	246.70
Naphtha	130.43	-							114.08	-
Total			425.89	100.00	432.86	101.64	440.55	103.44		
Employment in other sections			185.71	100.00	168.34	90.65	190.15	102.39		
Total federal public enterprise employment			611.60	100.00	601.20	98.30	680.70	103.12		

Notes: (a) Iron ore production; (b) Raw steel production; (c) Generated electricity; (d) Operating telephone terminals; (e) Rail cargo freight [ton/kg]; (f) Number of posted objects; (g) Cargo movement [ton]; (h) Excluding employment in investment projects; (i) Data referring to 1981, in the case of electricity; (j) For electricity, 1981 = 100.

Sources: Brazil, SEPLAN/SEST [1986] and *Anuário Estatístico do Brasil*, IBGE.

Going back to the analysis of table 3D, one may notice an increase in the importance of other operational expenditures (mainly made up of expenditures on goods and Services) till 1983, and a fall thereafter. That may be basically explained by reduced outlays on oil imports, stemming from a combination of falling demand, import substitution and decreasing imported oil prices. Financial expenditures, on the other hand, increased very fast through the whole period. Measured as per cent of the GDP, they were more than three times higher in 1985 as compared to 1980. In the beginning of the period financial expenditures corresponded to 6.8% of federal public enterprises' aggregate current expenditure. Five years later that share had risen to 19.1%, in the wake of increasing indebtedness and the effects of the exchange rate real devaluation on the cruzeiro value of both public enterprises' outstanding foreign debt and interest payments on it.

According to table 3D, after 1981 public enterprises' aggregate operational revenue was systematically smaller than their aggregate current expenditure. Again, operational revenue was much affected by the pricing policies followed during the period, which were inspired by government's recurrent attempts to conduct anti-inflation policy on the basis of price restraint within the public sector³⁰. Table 3F presents the evolution of real price indexes for some important outputs of large federal public enterprises during the period. In five years the fall in real prices and tariffs reached approximately 20% in the case of electricity, 31% in the case of postal services, 33% in the case of gasoline and 9% in the case of gas. Telecommunication tariffs were reduced by 41% from 1980 to 1984. Noteworthy exceptions were fuel oil and diesel prices³¹. It is important to note that this deterioration of public enterprises' outputs real prices since 1980 only aggravated the effects of a falling real prices trend that really goes back to the mid-seventies, as was seen in the previous section.

Public Sector's Investment and Debt

For the period under analysis in this section, it was not possible to construct a counterpart of table 2H, consolidating in a consistent way the government sector's data and federal public enterprises' data, in order to obtain a clear view of the public sector's capital account. What was possible was to bring together the available information on the behaviour of public sector's investment over the period. As shown in table 3G, public sector's, fixed investment represented an average of approximately 1/3 of the economy's gross fixed capital formation, in the 1980-84 period. As a result of government's effort to cut back PSBR after 1982, public sector's real investment was

³⁰ That kind of anti-inflation policy has been tried in different countries and does not constitute at all one more Latin American economic policy deviation. See Millward [1976], for an account of similar attempts in the United Kingdom. For a fuller discussion on the Brazilian experience in the early eighties, see Werneck [1986a].

³¹ The long delayed adjustment in the real prices of those products became unavoidable after the second oil shock. From 1973 to 1979, imported oil quantum per unit of GDP had fallen only 5%. Imports were still equivalent to approximately 85% of the domestic oil consumption in 1979.

reduced in 1984 to less than 70% of the 1980 level, what explains a large part of the 1981-83 recession. The cutback in public enterprises' investment was somewhat more severe than in government's, as SEST's controlling powers became more effective, and as a whole vintage of investment projects, started in the mid-seventies, were reaching completion in the early eighties³².

Table 3F
Selected real price indexes of public enterprises' outputs (1980 = 100)

Year	Electricity ^a	Telecommunications ^b	Flat steel ^c	Postal services ^d	Gasoline	Diesel oil	Fuel oil ^e	L. P. Gas
1970	123.76	-	141.36	27.70	33.10	53.59	31.45	114.20
1980	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1981	104.47	89.62	109.34	132.78	93.28	119.19	141.27	97.61
1982	93.57	82.45	137.77	137.84	87.56	118.93	126.46	90.23
1983	85.24	63.22	95.89	78.21	81.37	123.65	135.73	99.36
1984	79.19	59.44	183.34	57.45	76.53	122.11	142.26	105.85
1985	83.23	-	104.97	69.49	66.37	107.59	132.31	91.24

Notes: (a) Average tariff per kw; (b) Telephone tariff; (c) Unplated flat steel; (d) Simple letter tariff; (e) Fuel oil [A/BPT]. All prices and tariffs deflated using the General Price Index (IGP-DI).

Sources: CNP, ECT, Eletrobras, Siderbras and Telebras.

Table 3G
Public sector's fixed investment^a

Year	1980	1981	1982	1983	1984	1985
Government fixed Investment						
Real value index	100.00	103.56	99.03	70.16	74.84	-
As percent of the economy's gross fixed capital formation	10.55	11.62	11.98	10.61	11.42	-
As percent of GDP	2.32	2.51	2.47	1.81	1.89	-
Federal public enterprises' fixed investment						
Real value index	100.00	105.68	104.10	73.10	67.42	69.39
As percent of the economy's gross fixed capital formation	20.51	23.06	24.50	21.49	20.02	-
As percent of GDP	4.50	5.10	5.06	3.68	3.31	3.15
Total public sector's fixed investment ^a						
Real value index	100.00	104.96	102.30	72.10	69.94	-
As percent of the economy's gross fixed capital formation	31.06	34.68	36.49	32.10	31.45	-
As percent of GDP	6.82	7.64	7.53	5.49	5.20	-

Note: (a) does not include public investment of state and local level public enterprises. Real value indexes were estimated using the General Price Index (IGP-DI).

Sources: National Accounts, New Series and Brazil, SEPLAN/SEST [1986b].

³² On the effects of SEST's Controls on public enterprises' investment, see Werneck [1985].

The evolution of public sector's debt over the period under analysis is presented in table 3H, which was computed from re-estimates recently published by the Central Bank. Unfortunately, the new available series only start in 1981. It may be seen that the total public sector's net debt practically doubled as a proportion of GDP during the period. A large part of that increase occurred in 1983, basically as a result of the effect of the February maxi-devaluation on the cruzeiro value of the outstanding debt. Not only the external debt was affected, but also the large foreign currency denominated component of the public sector's domestic debt³³. As the net debt – GDP ratio reaches 50%, public sector accounts are becoming increasingly strained by the need to accommodate the required debt Service expenditures and vulnerable to a rise in interest rates.

Table 3H
Brazil, 1981-1985 – Public sector's net debt

	As percent of GDP				
	1981	1982	1983	1984	1985
Domestic debt	11.25	12.62	17.77	17.75	20.07
Central federal Government	2.72	2.81	4.01	5.3?	7.25
State and local Governments	3.12	3.60	4.85	4.14	4.22
Public enterprises and decentralized agencies	5.41	6.21	8.91	8.22	3.61
External debt	14.02	15.80	26.56	29.60	30.10
Central federal Government	4.16	4.93	0.13	12.56	11.72
State and local Governments	0.81	0.95	1.47	1.54	1.84
Public enterprises and decentralized agencies	9.04	9.93	14.95	15.50	16.54
Total	25.26	28.43	44.33	47.35	50.17

Note: All data, except those referring to 1981, are annual averages.

Source: Computed on the basis of data published in Brazil, Banco Central do Brasil [1986].

4. Asymmetric Adjustment and Growth Prospects

The two previous sections provided a detailed analysis of the public sector behaviour from the early seventies to the mid-eighties, a period during which the Brazilian economy has been submitted

³³ Part of the domestic debt was issued as exchange rate indexed bonds. Furthermore, since the early seventies the Central Bank started to retain (and eventually to allow) deposits of part of the inflows of foreign loans. At first that was intended only to avoid an excessive inflow of loans and the resulting monetary pressures. Later on that was also seen as a way to foster the inflow of foreign loans, since the Central Bank announced it would offer the same interest rates and conditions affecting a new loan to foreign currency denominated deposits of any part of that loan. What was at first only valid to new loans was eventually opened up to formerly contracted foreign loans. That allowed the anticipation of the repayment of any foreign debt by simply depositing the equivalent cruzeiro value in the Central Bank, that would then take full responsibility for the debt contract, as long as the deposit was not drawn. As the debt crisis gathered, debtors could easily shift to the Central Bank the rapidly rising foreign exchange rate risk. See Ferracioli, Dib and Dias [1985] and Parkinson de Castro and Lundberg [1985].

to a series of important external shocks, that were briefly outlined in the first section. One may now try to have a broader perspective of that behaviour and to identify the overall adjustment patterns followed by the public sector in response to the external difficulties and domestic pressures faced by the Brazilian economy along the period.

During the growth-cum-debt period, the public sector adjustment was characterized by two different trends that were obviously inconsistent in the long run. On one hand, the huge import-substituting and export promoting program, that constituted the core of the long-run strategy of adjustment of the Brazilian economy to the oil shocks, imposed on the public sector a sizeable and central part in the required investment effort. On the other hand, despite those enhanced commitments, public sector's share in aggregate income shrank significantly along the seventies. That latter trend stemmed from the falling gross tax burden, the rising transfers and subsidies to the private sector and the decreasing real prices and tariffs charged for the goods and services produced by public enterprises.

It is important to understand that, though untenable in the long-run, the coexistence of those two trends played important roles in the designed adjustment strategy. That strategy meant an exogenous determination of the economy's average annual growth rate, well above the rate that would be consistent with an equilibrium in the balance of payments current account, even in the medium run. Public sector's increasing borrowing requirements constituted a secure way to assure the steady flow of foreign loans that was required to finance the mounting deficitary external accounts position. The maintenance of the high investment self-financing capacity that public enterprises displayed in the early seventies, would mean having to rely more extensively on the nervous and risk avert private sector's investment behaviour to accomplish the increasingly difficult foreign capital flow targets. In other words, the adopted short-sighted economic policy logic was the following. As public enterprises had such an easy access to badly needed foreign loans to finance their investments, there seemed to be no problem in reducing their self-financing capacity. Actually, it would induce them to resort to debt capital to carry on the investment plans. There was therefore room to let their real prices and tariffs to be somewhat eroded, what would be particularly convenient since it would avoid unnecessary pressures on the worrisome evolution of inflation³⁴.

The reduction in the net tax burden and in public enterprises' real prices and tariffs allowed the burden of the adjustment to fall upon the public sector, and to delay therefore the required adjustment

³⁴ In fact, in the mid-seventies public enterprises were forbidden to resort to new equity capital from minority private shareholders and forced to limit their borrowing in the domestic financial markets, in order to induce them to resort to foreign loans. There is no room in the Brazilian case to ascribe the explosive behaviour of the foreign debt to a liberalization of borrowing restrictions imposed on public enterprises and agencies, that would have led to unwanted indebtedness from the point of view of the central government. Strict control on foreign exchange and external credit operations were maintained throughout the period under analysis in this paper. Foreign borrowing targets were explicitly established by government and their accomplishment carefully surveyed month after month by the Central Bank.

on the part of the private sector. But within the public sector the response to the shrinking share in aggregate income was the virtual disappearance of the important role the public sector had been playing as a saver. As there was no offsetting enhancement of private savings, the adjustment meant substituting foreign savings for domestic savings without any fall in consumption³⁵.

As interest payments on the, predominantly public, foreign debt soared in the wake of higher international interest rates, there was still no effort to increase the public sector's share in aggregate income in order to accommodate the mounting expenditures. Avoiding a rise in taxes and fearing the inflationary impact of a correction in public enterprises' real prices and tariffs, government simply resorted to increasing foreign and domestic indebtedness. The resulting pressure on interest rates in the domestic financial markets contributed to increase the transfers of resources from the public to the private sector over the eighties. Furthermore, when the foreign debt crisis came there was an effort to bail out private sector's borrowers through arrangements that permitted the absorption of foreign exchange risks by the Central Bank, aggravating public sector's financial strains.

The concentration of the adjustment burden on the public sector, revealed by its shrinking share in aggregate income, and the consequent disappearance of its savings capacity poses important questions on the ability of the Brazilian economy to sustain again the high average historical growth rate it was able to maintain from the late forties to 1980. That would involve a significant enhancement of the present low domestic saving effort, what could hardly be obtained without re-establishing the importance of public sector's savings³⁶.

³⁵ See Werneck [1986c] for a more complete analysis of this point.

³⁶ The design of a policy that could effectively generate the required enhancement of the domestic savings effort in Brazil involves some important trade-offs that are analysed in Werneck [1987], through simulations based on two simple consistency models. Those simulations outline what would be the required increase in the private sector's saving effort in different scenarios, that involve distinct sets of hypotheses on the evolution of income distribution and of variables that determine the public sector's savings capacity. The results stress the lack of realism of savings policies that do not restore the importance of public sector's savings, which used to represent – in the mid-seventies – one third of total domestic savings in Brazil.

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